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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,856	11/14/2001	Margaret M. Jahn	19603/3391 (CRF D-2702A)	7990

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EXAMINER	
KUBELIK, ANNE R	

ART UNIT	PAPER NUMBER
1638	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/993,856	JAHN, MARGARET M.	
	Examiner	Art Unit	
	Anne R. Kubelik	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,18-22,39-43,45,62-65 and 67-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,18-22,39-43,45,62-65 and 67-73* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12 July 2004 has been entered.

2. Claims 1, 18-22, 39-43, 45, 62-65 and 67-73 are pending.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. The rejection of claims 1, 18-22, 39-43, 45, 62-65 and 67-73 r under 35 U.S.C. 112, first paragraph, for new matter is withdrawn in light of Applicant's pointing to support for the amendments.

Claim Rejections - 35 USC § 112

5. Claims 1, 18-22, 39-43, 45 and 62-65 and 67-73 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The rejection is modified from the rejection set forth in the Office action mailed 8 January 2004, as applied to claims 1, 18-22, 39-43, 45, 62-65 and 67-73. Applicant's arguments and the Declaration of Dr. Margaret Jahn, both filed 12 July 2004, have been fully considered but they are not persuasive.

Applicant and the Declaration urges that Cornell ZPPM 339, TAM Uvalde, UC Topmark, Oro Rico, Galia type, Ananas type, PI 157082, PI 511890, PI 482399, PI 482398 and PI 140471,

and to a plant line designated NY 01-190-3R, -7L, -9L are all readily available thorough the U.S. National Germplasm System, commercially, or via the Department of Plant Breeding at Cornell (response pg 7-8, Declaration pg 2-3).

This is not found persuasive for Ananas type plants because none of the varieties are described as Ananas type. This is also not persuasive for Cornell ZPPM 339 because there is no guarantee that such plants will be available for a period of 30 years or 5 years after the last request or for the enforceable life of the patent, whichever is longer.

See MPEP 2404, which states :

> Ex parte Humphreys, 24 USPQ2d 1255 (Bd. Pat. App. & Int.1992), held that the only manner in which applicants could satisfy their burden of assuring public access to the needed biological material, and, thereby, compliance with the enablement requirement of 35 U.S.C. 112, was by making an appropriate deposit. The fact that applicants and other members of the public were able to obtain the material in question from a given depository prior to and after the filing date of the application in issue did not establish that upon issuance of a patent on the application that such material would continue to be accessible to the public.

The Declaration urges that all restrictions upon the availability of NY 01-190-3R, -7L, -9L to the public will be irrevocably removed upon granting of the patent (Declaration pg 1).

This is portion of the rejection is withdrawn.

6. Claims 1, 18-22, 39-43, 45, 62-65 and 72 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejection is modified from the rejection set forth in the Office action mailed 8 January 2004, as applied to claims 1, 18-22, 39-43, 45, 62-65 and 67-73. Applicant's arguments filed 12 July 2004 have been fully considered but they are not persuasive.

The claims are drawn to *C. melo* plants and methods of producing *C. melo* plants that involve unidentified parent plants and in claims 19-21 an indeterminate number of generations

and parent plants, wherein it remains unclear what the identity of the plants in each of the steps would be, much less what the resultant product plant would be. Neither the plants required by each of the steps, nor the plants that are produced by the process are defined by genomic structure or by phenotypic characteristics, and therefore, the claimed invention lacks an adequate written description.

It is not clear that Cornell ZPPM 339, TAM Uvalde, UC Topmark, Oro Rico, PI 157082, PI 511890, PI 482399, PI 482398 or PI140471 are homozygous inbred lines; thus, deposit of seeds from these lines does not define progeny of crosses between any two of these plants.

Galia type and Ananas type melons are not inbred lines, but are simply types of plants and can be any of numerous different genotypes. Staub et al (2000, Euphytica 115:225-241) teach that Galia is merely a rough phenotypic description that looks like other phenotypic groups (see Table 1) and that plants grouped as Galia are not genetically closely related (pg 235, right column, paragraph 3). Thus, these plants are not described, and progeny of crosses of these plants with each other or any of the above plants are not described.

The second *C. melo* plant used in the method of claims 19-21 is also not described.

As seed from a NY 01-190-3R, -7L, -9L plant includes seed produced by crossing to other plants, such seed is not described, and a tissue culture produced from such seed or from a fruit, which comprises such seed is not described.

Neither the plants required by each of the steps, nor the plants that are produced by the process are defined by genomic structure or by phenotypic characteristics. Therefore, plants produced by crosses among these plants are not described, and the claimed invention lacks an adequate written description.

See *University of California v. Eli Lilly*, 119 F.3d 1567, 43 USPQ 2d 1405 (Fed, Cir. 1997), where it states:

> [a] written description of an invention involving a chemical genus, like a description of a chemical species, "requires a precise definition, such as by structure, formula, [or] chemical name," of the claimed subject matter sufficient to distinguish it from other materials.

Therefore, given the lack of written description in the specification with regard to the structural and physical characteristics of the claimed compositions, it is not clear that Applicant was in possession of the genus claimed at the time this application was filed.

Applicant urges that the amendments to the claims are sufficient to over this rejection and points to support for the amendments (response pg 9-10).

This is not found persuasive because this argument is directed to the new matter rejection, not the instant written description rejection.

7. Claims 1, 18-22, 39-43, 45, and 62-65 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention. Dependent claims are included in all rejections. The rejection is modified from the rejection set forth in the Office action mailed 8 January 2004, as applied to claims 1, 18-22, 39-43, 45, 62-65 and 67-73. Applicant's arguments filed 12 July 2004 have been fully considered but they are not persuasive.

Claims 20-21 remain indefinite because there are no clear positive method steps.

Applicant urges that the rejection is traversed in view of amendments (response pg 10-11).

This is not found persuasive. The method steps of the traditional plant breeding techniques in claim 20 and the tissue culture techniques of claim 21 are not clearly defined. It is uncertain for each of the recited techniques what steps they would be comprised of and what

plants would be used for each cross. Backcrossing, as recited in the method of claim 20, is very different than selfing, intercrossing and pedigree breeding, and reach method has numerous possible method steps. It is also unclear where in the method of claim 20, tissue culture techniques, as claimed in claim 21, would occur. It is also unclear how many techniques would be used and in what combinations.

In claim 42, is Applicant claiming a tissue culture or the plant regenerated from it? If the former, it is suggested that "are" in line 4 be replaced with --can be --.

Applicant did not address this rejection.

The following rejections are new:

The term "enhanced" in claims 1, 22 and 45, lines 14-17, is a relative term that renders the claim indefinite. The term "enhanced" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the metes and bounds of the invention. Enhanced relative to what?

Claim 18 lacks antecedent basis for the limitation "hybrid seed according to claim 1" as claim 1 is drawn to a method.

Claim Rejections - 35 USC § 102

8. Claims 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Prasad et al (1967, Amer. Hort. Sci. 91:396-400).

Prasad et al teach a method of producing gummy blight resistant *C. melo* hybrid seed by crossing hybrid gummy blight resistant *C. melo* plants to resistant *C. melo* plants, and seeds and plants thereby obtained (Tables 3-4). The method steps used include backcrossing, selfing, "pedigree breeding" and "intercrossing". The plants involved include PI 140471 (referred to as

P-1 in the tables, see legend to Table 1).

Claim Rejections - 35 USC § 103

9. Claims 1 and 18-20 remain rejected under 35 U.S.C. 103(a) each of Prasad et al (1967, Amer. Hort. Sci. 91:396-400) and Norton et al (1989, HortSci. 24:709-711) in view of each of Kalb et al (1984, J. Amer. Hort. Sci. 109:411-415) and Zhang et al (1997, HortSci. 32:117-121). The rejection is repeated for the reasons of record as set forth in the Office action mailed 8 January 2004, as applied to claims 1, 18-20, 22, 39-41, 43, 45, 62-63 and 65. Applicant's arguments and the Declaration of Dr. Margaret Jahn, both filed 12 July 2004, have been fully considered but they are not persuasive.

The claims are drawn to methods of producing gummy blight resistant *C. melo* hybrid seed by crossing gummy stem blight resistant *C. melo* plants to resistant and non-resistant ones, and seeds and plants thereby obtained. The claims are also drawn to the use of the non-resistant variety UC Topmark and the resistant varieties PI 140471, PI 157082, PI 511890, PI 482398 and PI 482399 in the crosses.

Prasad et al teach a method of producing gummy blight resistant *C. melo* hybrid seed by crossing gummy blight resistant *C. melo* plants to resistant and non-resistant *C. melo* plants, and seeds and plants thereby obtained (pg 397-399 and Tables 1-5). The method steps used include crossing the two parent plants, growing the first generation hybrid seed to yield first generation resistant hybrid plants (table 2) and backcrossing the hybrid plants to produce seed and offspring plants from that seed (table 4), which would constitute "using germplasm derived from the hybrid plant in a plant breeding program". The parent plants include PI 140471 (referred to as P-1 in the tables, see legend to Table 1), which inherently has the dominant resistance gene *Gsb1*

(see Prasad et al, pg 399, paragraph 2 and the instant specification, pg 25, lines 4-11). The susceptible cultivars used are muskmelons, (pg 397, paragraph 2), which the instant specification teaches belongs to *C. melo cantalupensis* (pg 1, lines 26-27). The parent plants taught by Prasad et al also include plants with moderate resistance conferred by dominant genes (pg 399, paragraph 2). Prasad et al also teach crossing the resulting hybrid plants to resistant and susceptible plants (Table 4). Plants regenerated from tissue culture of any of the plants taught by Prasad et al would inherently be identical to the plants taught by Prasad et al.

Norton et al teach a method of producing gummy blight resistant *C. melo* hybrid seed by crossing gummy blight resistant PI 140471 *C. melo* plants to the non-resistant plant Georgia 47, and seeds and offspring plants thereby obtained (Fig. 1). PI 140471 inherently has the dominant resistance gene *Gsb1*, as discussed above. Crossing of subsequent generations involves crossing of two resistant plants and backcrossing (Fig. 1), which would constitute "using germplasm derived from the hybrid plant in a plant breeding program". Plants regenerated from tissue culture of any of the plants taught by Norton et al would inherently be identical to the plants taught by Norton et al. Georgia 47 is a muskmelon (Table 1), which the instant specification teaches belongs to *C. melo cantalupensis* (pg 1, lines 26-27).

Neither Prasad et al nor Norton et al disclose use of the varieties UC Topmark, PI 157082, PI 511890, PI 482398 or PI 482399 in the crosses.

Kalb et al teach the fruit quality characteristics of UC Topmark and other *C. melo* muskmelon varieties (Tables 1 and 3-4).

Zhang et al teach the resistance of a number of *C. melo* varieties, including PI 140471, PI 157082, PI 511890, PI 482398, PI 482399 and Topmark, to gummy blight (Tables 1 and 2). PI 140471, PI 157082, PI 511890, PI 482398 and PI 482399 were identified as having high levels

of resistance (abstract).

The instant specification teaches that PI 140471, PI 157082, PI 511890, PI 482398 and PI 482399 have the Applicant-defined gummy stem blight resistance genes *Gsb1*, *Gsb2*, *Gsb4*, *Gsb5* and *gsb3*, respectively (pg 28, lines 28-30).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the method of producing gummy blight resistant *C. melo* hybrid seed taught by each of Prasad et al and Norton et al, to use the *C. melo* varieties described in each of Kalb et al and Zhang et al. One of ordinary skill in the art would have been motivated to do so because of the fruit qualities that a line like UC Topmark and other *C. melo* varieties could bring to breeding programs (Kalb et al, pg 413, paragraph spanning the columns) and because use of gummy blight resistance lines other than PI 140471 could breed melons with higher gummy stem blight resistance (Zhang et al, pg 117, column 2, paragraph 1). Zhang et al also suggest using the lines they have identified as having resistance in breeding programs (pg 120, column 3, paragraph 4).

Applicant urges that the claimed plants and seeds are phenotypically limited in that they have commercially appealing attributes (response pg 12-13).

This is not found persuasive because the plants would have "enhanced disease tolerance", "enhanced stems", "enhanced roots", "enhanced fruit shelf life" "enhanced seedling vigor", "enhanced fruit size" "enhanced fruit quality" "enhanced insect tolerance" and "enhanced fruit shelf life" relative to at least some other melon varieties, including unimproved plants isolated from the wild.

The Declaration urges that none of the references alone or in combination teach crossing the recurrent and non-recurrent parents plants described in the present application to yield the instantly claimed gummy blight resistant plants (Declaration pg 3-4).

This is not found persuasive because this assertion is not backed up with any specific arguments.

Applicant urges that there is no showing a reasonable expectation of success; Prasad does not teach to suggest crossing PI 140471 with any of the recited non-resistant varieties, Norton does not teach or suggest that crossing PI140471 with melon varieties other than Georgia 47 would be successful, Zhang only screens plants to determine their level of resistance and Kalb doesn't even discuss gummy blight resistance (response pg13-14).

In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Zhang et al suggest using the lines they have identified as having resistance in breeding programs (pg 120, column 3, paragraph 4). Kalb et al is not used in this rejection for teaching using a gummy blight resistance melon to impart gummy stem blight resistance in plants, but instead is used because it teaches that the fruit qualities UC Topmark and other *C. melo* varieties could bring to breeding programs (Kalb et al, pg 413, paragraph spanning the columns).

Norton's success in producing a resistant plant using PI 140471 and one commercially appealing recurrent parent provides motivation and a reasonable basis for success that other resistant plants could be produced using PI 140471 and another commercially appealing

recurrent parent. Prasad's success in producing resistant progeny also provides motivation and a reasonable basis for success.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad et al (1967, Amer. Hort. Sci. 91:396-400) and Norton et al (1989, HortSci. 24:709-711) in view of each of Kalb et al (1984, J. Amer. Hort. Sci. 109:411-415) and Zhang et al (1997, HortSci. 32:117-121) as applied to claims 1, 18-20, 22, 39-41, 43, 45, 62-63 and 65 above, and further in view of Trulson et al (1986, Plant Science 4:35-43). The rejection is repeated for the reasons of record as set forth in the Office action mailed 8 January 2004, as applied to claims 21, 42 and 64. Applicant's arguments filed 12 July 2004 have been fully considered but they are not persuasive.

The teachings of Prasad et al and Norton et al in view of each of Kalb et al and Zhang et al are discussed above. Prasad et al and Norton et al in view of each of Kalb et al and Zhang et al does not disclose the use of tissue culture techniques in the breeding program or tissue culture of the plants they produced.

Trulson et al teach tissue culture and plant regeneration in *C. melo* (pg 39, right column, paragraph 3)

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the method of producing gummy blight resistant *C. melo* hybrid seed as taught by Prasad et al and Norton et al in view of each of Kalb et al and Zhang et al, to use tissue culture techniques as described in Trulson et al in the breeding program. One of ordinary skill in the art would have been motivated to do so because of the importance of tissue culture techniques in plant breeding (Trulson et al, pg 42, right column, paragraph 3).

Applicant urges that Trulson does not over the deficiencies of Prasad et al and Norton et al (response pg 14).

This is not found persuasive for the reasons above.

Claim Rejections - 35 USC §§ 102 - 103

11. Applicant's arguments to the rejections are presented together, will be addressed together below, after presentation of both rejections.

12. Claims 22, 39-43, 45, 62-65 and 67-73 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103 as obvious over Prasad et al (1967, Amer. Hort. Sci. 91:396-400). The rejection is repeated for the reasons of record as set forth in the Office action mailed 8 January 2004, as applied to claims 67-73. Applicant's arguments and the Declaration of Dr. Margaret Jahn, both filed 12 July 2004, have been fully considered but they are not persuasive.

Applicant has claimed melon plants, including unnamed hybrids and NY 01-190-3R, -7L, -9L, produced after backcrossing melon plants. However, it appears that the claimed plants and seeds are the identical to the melon plants and seeds taught by Prasad et al (Table 4), given that each has gummy blight resistance and enhanced disease tolerance, for example. Alternatively, if the claimed plants and seeds of the instant invention are not identical to the melon plants and seeds taught by Prasad et al, then it appears that the melon plants taught by Prasad et al only differ from the claimed plants and seeds due to minor morphological variation, wherein said minor morphological variation would not confer a patentable distinction to the instantly claimed plants. Thus the claimed invention was *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, if not anticipated by the melon plants and seeds taught by Prasad et al.

13. Claims 22, 39-43, 45, 62-65 and 67-73 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103 as obvious over Norton et al (1989, HortSci. 24:709-711). The rejection is repeated for the reasons of record as set forth in the Office action mailed 8 January 2004, as applied to claims 67-73. Applicant's arguments and the Declaration of Dr. Margaret Jahn, both filed 12 July 2004, have been fully considered but they are not persuasive.

Applicant has claimed melon plants, including unnamed hybrids and NY 01-190-3R, -7L, -9L, produced after backcrossing melon plants. However, it appears that the claimed plants and seeds are the identical the prior art melon AC-70-154, given that each has gummy blight resistance and enhanced disease tolerance, for example. Alternatively, if the claimed plants and seeds of the instant invention are not identical to AC-70-154, then it appears that AC-70-154 only differs from the claimed plants and seeds due to minor morphological variation, wherein said minor morphological variation would not confer a patentable distinction to the instantly claimed plants. Thus the claimed invention was *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, if not anticipated by AC-70-154 melon plants and seeds.

Applicant and the Declaration of Margaret Jahn urge that NY 01-190-3R, -7L, -9L has a particular pedigree, which are different from those of the cited references (response pg 14; Declaration ¶12).

This is not found persuasive because a prior art plant having the same characteristics as the claimed plant would anticipate the claimed plant even if made by a different method (i.*e.*, using a different parent plant).

Applicant urges that the level of gummy stem blight resistance in NY 01-190-3R, -7L, -9L is significantly higher than any of the hybrid plants in the cited references (response pg 14).

This is not found persuasive. This is an assertion only, not backed up with any data comparing the gummy stem blight resistance of NY 01-190-3R, -7L, -9L with the gummy stem blight resistant plants taught by each of Prasad et al and Norton et al.

Conclusion

14. No claim is allowed.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached at (571) 272-0804. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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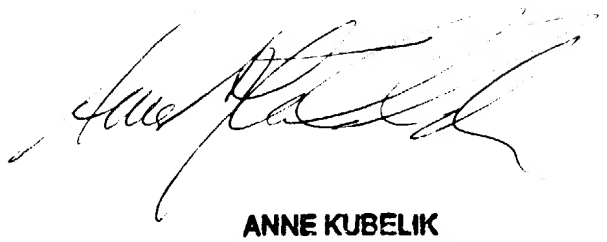
Anne R. Kubelik, Ph.D.
September 15, 2004



ANNE KUBELIK
PATENT EXAMINER